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Motivational Factors of the Nurse Anesthesia Student

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MOTIVATIONAL FACTORS OF THE NURSE ANESTHESIA STUDENT

by

Terry Lynn Stock
Bachelor of Science, Moorhead State University, 1988

A Thesis

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Master of Science

Grand Forks, North Dakota

July
1992

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This thesis, submitted by Terry Lynn Stock in partial fulfillment of the requirements for the Degree of Master of Science from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

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This thesis meets the standards for appearance, conforms to the style and format requirements of the Graduate School of the University of North Dakota, and is hereby approved.

Harvey Knud
Dean of the Graduate School
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Signature Terry L. Stock

Date 14 JULY, 1992

TABLE OF CONTENTS

	PAGE
LIST OF ILLUSTRATIONS	vi
LIST OF TABLES	vii
ACKNOWLEDGEMENTS	viii
ABSTRACT	ix
CHAPTER I. INTRODUCTION	1
Significance of the Study	3
Purpose of the Study	4
Problem Statement	4
Research Question	5
Theoretical Framework	5
Definitions	8
Assumptions	9
Limitation	9
CHAPTER II. REVIEW OF THE LITERATURE	10
History	10
Nurse Anesthesia Practice and Shortage	11
Human Need and Motivation	14
Dissatisfiers as Motivators	16
Satisfiers as Motivators	18
Summary	22
CHAPTER III. METHODOLOGY OF THE STUDY	24
Population	24
Sample	24
Study Design	24
Data Collection	25
Instrument	25
Instrument Reliability and Validity	27
Data Analysis	28
Protection of Human Subjects	28

CHAPTER IV. RESULTS	31
Description of the Sample	31
Extrinsic/Intrinsic Motivating Factors in Pursuing Graduate Nurse Anesthesia Education	34
Projected and Self-Rankings of Reasons for Entering Program	42
CHAPTER V. DISCUSSION AND CONCLUSION	47
Summary and Discussion	47
Demographics	48
Motivational Factors	48
Comparison of Extrinsic and Intrinsic Factors	52
Conclusions	54
Recommendations	56
Research	56
Practice	57
Education	58
APPENDICES	59
APPENDIX A. PROGRAM DIRECTOR CONSENT FORM	60
APPENDIX B. CONSENT FORM	61
APPENDIX C. MOTIVATIONAL FACTORS OF FIRST YEAR ANESTHESIA NURSING STUDENTS QUESTIONNAIRE	62
REFERENCES	68

LIST OF ILLUSTRATIONS

FIGURE	PAGE
1. Comparison of Abraham Maslow's needs and Herzberg's satisfiers and dissatisfiers	7
2. Average Subscale Ratings of Intrinsic and Extrinsic Motivational Factors	38
3. Average Overall Ratings of Intrinsic and Extrinsic Motivational Factors	40
4. Comparison of Self and Projected Rankings of Reasons for Pursuing Nursing Anesthesia Education	46

LIST OF TABLES

TABLE	PAGE
Mean, Standard Deviations, and Cronbach Alpha Coefficients Intrinsic and Extrinsic Subscales (N= 51)	29
Sample Profile (Demographic Characteristics)	32
Frequency and Percent of Number of Years Worked in Critical Care (N=51)	35
Frequency and Percent of Number of Years Worked in the Nursing Profession (N=51)	36
ANOVA for Demographic Class Level Information as Related to the Four Intrinsic and Four Extrinsic Subscales (N=51)	39
ANOVA for Demographic Class Level Information (Total of Extrinsic and Intrinsic Scales	41
Self-Reason Ranking Identified as Highest to Lowest	44
Projected Reason Rankings Identified as Highest to Lowest	45

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ABSTRACT

The purpose of this descriptive, survey study was to identify intrinsic and extrinsic factors that motivate critical care registered nurses (RN's) in entering a graduate nurse anesthesia educational program. The intent was to identify specific motivators to provide information helpful in increasing the number of anesthesia educational program enrollments to alleviate the shortage of certified registered nurse anesthetists (CRNAs).

A pilot study was conducted. Program directors were contacted for permission to approach the students. A convenience sample of fifty-one first year nurse anesthesia students from three different northcentral educational programs were surveyed. Data were collected via a researcher developed questionnaire which was distributed and collected on site by the researcher during a pre-scheduled time.

The survey instrument contained demographic items as well as intrinsic and extrinsic motivational factors using a five point Likert scale. A descriptive data analysis of demographic and univariate factors was accomplished. Other reasons for entering a graduate nurse anesthesia education program were also included for ranking by the subjects. Data were quantitatively analyzed using analysis of variance (ANOVA) and categorization.

Subjects were fully informed on the nature, length, and purpose of the study. Participation was on a strictly voluntary basis and anonymity and confidentiality was guaranteed. Human subject approval was obtained.

A major finding of this study was most nurse anesthesia student subjects were motivated by higher level needs. It was found that overall intrinsic factors were more important than extrinsic factors in motivating a critical care nurse to pursue an education in graduate nurse anesthesia. Major motivational factors reported in this sample included increased individual responsibility and autonomy, which may help to promote feelings of self-actualization. Inconsistencies were found in relation to increased financial rewards when comparing the eight subscales to the twelve reason rankings (projected and self). The only demographic factors reported as making a difference were that, in general, females scored lower on the autonomy scale than males, and subjects who had two or more children tended to give the lowest ratings on all scales except increased level of competence.

CHAPTER I

INTRODUCTION

Since its beginning in 1842, anesthesiology has evolved into a recognized nursing specialty providing continued improvement in patient care offered. The first nurse anesthetists were nuns, beginning with Sister Mary Bonard in 1877. In 1880 Sister Aldoza Eltrich initiated education of anesthesia in Illinois at St. Johns Hospital. Agnes McGee initiated a six month educational curriculum for nurses pursuing anesthesia at St. Vincents' Hospital in Portland, Oregon in 1909. At that point, nurse anesthesia education was formally identified (Barash, Cullen, & Stoelting, 1989). Gunn, Nicosia, and Tobin (1987) state, "Nurse anesthetists were first identified in the Ohio Medical Practice Act in 1919" (p. 99). This was the first such loyal recognition of a nursing specialist within a state practice law. It is notable that the Ohio provision addressed the fact that the Medical Practice Act shall not exclude qualified nurses from performing anesthesia (Gunn et al.).

Anesthesia in nursing has evolved over the years into a recognized nursing specialty, despite periods of opposition from the American Medical Association (Zambricki & Ouellette, 1987). In the past, nearly 50 percent of the anesthetics used in the United States each year were administered by certified registered nurse anesthetists (CRNA), and that percentage is presently climbing (Stoelting & Miller, 1989). At present, the American Association of Nurse Anesthetist (AANA) remains

responsible for the curriculum of the majority of nurse anesthesia training programs, as well as establishment of criteria for certification as a nurse anesthetist (Stoelting & Miller).

The "explosion of knowledge" has become a cliché in describing the effect of society's technological advances on almost any human activity that comes to mind. Scientific study today probes deeper, higher and wider, unveiling information on a scale too large for many individuals to conceive. In the world of anesthesia, this is mirrored by the presence of newly developed and evolving equipment and techniques being applied in increasingly complex patient care situations. The patients, as consumers, have also been exposed to this information explosion and have begun to expect near perfection in their treatment with nothing less than positive outcomes (Jordan, 1991).

In February of 1990, the US Department of Health and Human Services (HHS) identified a shortage of approximately 6,000 to 7,000 CRNAs, and projected a need for a total of 35,000 by the year 2010. To meet this need, it is projected that 1,800 nurse anesthetists must be trained annually through the year 2000 and 1,500 annually thereafter (National Center for Nursing, 1990).

With the increased numbers of surgical procedures, a greater demand for anesthesia services is being seen. There is an increasing number of locations where surgery is being performed (hospitals, specialty and general ambulatory surgicenters, and physicians offices), and it is axiomatic that the more decentralized the locations for practice, the greater the number of personnel required to cover those locations.

Furthermore, due to scientific and technological advances, there are increasing numbers of anesthetics where administration requires the services of more than one anesthetist (Jordan, 1991).

As the demand for CRNAs has increased, a concomitant decrease has been seen in the number of graduates being produced by educational programs. In 1975, there were 210 accredited nurse anesthesia educational programs, with between 1,100 to 1,200 graduates. This is contrasted to 1990 figures of approximately 80 accredited programs with close to 700 graduates per year (Jordan, 1991).

There are a number of factors which led to the reduction of nurse anesthesia programs, most occurring in the early to mid 1980's. Some of those factors included the nursing shortage, prospective payment legislation, increased educational requirements, an increase in the number of anesthesiologist residents, and concomitant decrease in CRNA clinical education sites (Zambricki & Ouellette, 1987).

Significance of the Study

There are a number of factors which have led to the present shortage of nurse anesthetists. It is hoped the results of this study will be useful to the AANA and anesthesia educators in formulating future goals of educational programs. Also, if educational administrators are aware of the main motivational factors of entry level anesthesia students, they can better market these factors to the nursing population. This may result in an increase in the number of applicants from which a quality pool of nurse anesthesia students may be selected. Employers may also benefit from this

information. By being aware of motivational factors, employers may be better able to meet needs, thus helping to maintain a more stable health care team.

Purpose of the Study

The purpose of this study was to identify the specific extrinsic and intrinsic factors which motivate nurses to enroll in nurse anesthesia educational programs. It is hoped that when ways can be found to increase nurse anesthesia education program enrollment, the the shortage of CRNA's can be alleviated to some degree.

Problem Statement

The current number of anesthesia programs without expanded admissions, is insufficient to meet the projected needs of CRNAs. Either the number of programs will have to increase or the number of students per program will need to increase (National Center for Nursing booklet, 1990).

Since the number of accredited nurse anesthesia educational programs has declined drastically since 1975, the possibility of the prospective student having to relocate to attend one is greater. As a result, family lifestyle may be severely altered. Most students entering anesthesia education are also confronted with the loss of the security and income of their present job. These factors may detour potential students and further contribute to the shortage. By addressing the cause of the shortage, it is hoped that the number of prospective students entering the field will increase.

Research Question

What are the intrinsic and extrinsic factors which motivate critical care, baccalaureate level, registered nurses (RNs) (hereafter referred to as the critical care nurse) to pursue education in nursing anesthesia?

What degree of importance do these factors hold?

Theoretical Framework

Human need theory is one of several theories which deal with job satisfaction. Humanistic psychologists view the individual as an integrated, organized whole who has the potential for growth, satisfaction, and creativity. The study of motivation entails the study of the ultimate human goals, desires, or needs. Each person is his own being, motivated to be the best one can be (Maslow, 1970).

CRNAs have the opportunity for acquiring a great deal of autonomy, especially if they are working independently in rural hospitals. AANA guidelines state, "The CRNA may practice independently, interdependently, or dependently according to his/her expertise, state statute, and institutional policy" (Grundy, 1987, p. 1130). RNs striving for a career in anesthesia must be secure enough in their level of proficiency as a critical care nurse in order to function competently with increasing levels of responsibility and autonomy as a future CRNA.

In Abraham Maslow's (1970) hierarchy of human needs theory, Maslow stresses that motivation is based on the internal drive of individuals to attain certain goals. Goals are determined by an individual's needs in a certain set of circumstances. According to Maslow's theory, higher level needs such as love, self-esteem, and

self-actualization are only met when lower level needs, such as physiological and safety, have been met (Maslow). A higher level need does not motivate a person until the lower, more basic needs are first satisfied, but once a lower-level need is satisfied, it no longer motivates (Maslow).

Maslow's Hierarchy of Needs (from basic to self-actualization) include:

1. Physiological: To satisfy hunger, thirst, and sex drives. To have shelter needs met.
2. Safety: Protection from threat, danger and bodily harm. To feel secure.
3. Belonging and Love: To have friendships, teamwork, amicable relationships and social acceptance.
4. Self-esteem: Self-confidence, self-respect, status recognition and the need for competency and knowledge.
5. Self-actualization: The need to realize one's potential as a unique human being (Maslow, 1970, p. 125).

Autonomy is a characteristic of self-esteem and self-actualization. The critical care nurse has met the lower-level needs, according to Maslow (1970), and is now guided by higher-level needs. Brunner (1983) states, "According to Maslow, actualization can be attained as one acquires the ability to direct one's own life; this frequently happens when one advances and obtains additional job responsibilities" (p. 25).

Frederick Herzberg's (1966) theory of job satisfaction and motivation also applies to this study. The motivators are factors intrinsic to work and include

recognition, achievement, possibility of growth, and responsibility. Herzberg's dissatisfiers (factors extrinsic to work) can be related to Maslow's lower level needs such as interpersonal relations on the job, salary, company policy, administration, and working conditions. Even when Herzberg's dissatisfiers, which address the safety and physiological needs are well managed, the nurse can remain unmotivated unless she/he has the opportunity to satisfy a higher level need (Herzberg). Below is a comparison of Maslow's needs and Herzberg's satisfiers and dissatisfiers.

Figure 1

Comparison of Abraham Maslow's Needs and Herzberg's Satisfiers and Dissatisfiers

MASLOW

HERZBERG

Needs:

Satisfiers:

- | | |
|--------------------------|-------------------------|
| - Actualization | - Achievement |
| - Self-esteem | - Recognition |
| - Love and belongingness | - Responsibility |
| | - Growth or advancement |

Needs

Dissatisfiers:

- | | |
|-----------------|--------------------------------------|
| - Safety | - Interpersonal |
| - Physiological | - Salary |
| | - Company policy and administration |
| | - Working conditions (Brunner, 1983) |

Herzberg's satisfiers thus further demonstrate that the higher level needs motivate nurses in both their personal and professional lives (Byers, 1989). It is felt that even though monetary values are more basic needs in Maslow's theory, and a dissatisfier in Herzberg's theory, it is one of the major motivational factors this study addressed.

Definitions

For the purpose of this study the following terms are defined:

American Association of Nurse Anesthetists (AANA): the professional organization responsible for accrediting the curriculum of the majority of nurse anesthesia training programs, as well as establishment of criteria for certification as a nurse anesthetist (Stoelting & Miller, 1989).

Anesthesia student: the registered nurse who has worked in a critical care setting for at least one year, met the acceptance standards and has enrolled in a nurse anesthesia educational program (Stoelting & Miller, 1989).

Certified registered nurse anesthetist (CRNA): a registered nurse qualified by advanced training in an accredited program in the specialty of nurse anesthesia to manage the anesthetic care of the patient in certain surgical conditions, licensed by the national certifying board examination (Mosby, 1990).

Critical care nurse: a registered nurse, with special training, who provides constant, complex, detailed health care as provided in various acute life-threatening conditions, such as multiple trauma, severe burns, myocardial infarction, or after certain types of surgery (Mosby, 1990).

Extrinsic motivational factors: factors extrinsic to work which are dissatisfiers, such as, interpersonal relations, salary, company policy, administration, and working conditions (Bevsek & Walters, 1990).

Factor: any of the conditions that bring about a result (Webster, 1967).

Intrinsic motivation factors: factors intrinsic to work which provide satisfaction, such as, achievement, recognition, responsibility, and growth or advancement (Bevsek & Walters, 1990).

Motivation: the state of mind with which a person views a particular task or goal. It is the result of both internal and external factors. It is spontaneous, uniquely personal, and often colored by a persons life experiences (Bevsek & Walters, 1990).

Assumptions

For the purpose of this study it was assumed that there are factors which motivate the critical care nurse to pursue nurse anesthesia. It was assumed that nurse anesthesia students have higher level needs than the basic physiological and safety needs. It was assumed that the anesthesia students surveyed would be honest in their responses.

Limitations

The study was limited by the non-randomness of the sample, and the accuracy of subjects in recalling and documenting applicable factors on the questionnaire.

CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this study was to identify factors which motivate critical care registered nurses to enroll in nurse anesthesia programs. It is hoped that this study provided information useful in the efforts to resolve the certified registered nurse anesthetist (CRNA) shortage.

The historical background of nurse anesthesia and the American Association of Nurse Anesthetists (AANA) will be presented in this chapter. A review of literature related to job satisfaction and motivational factors which enhance persons to advance in their careers will also be presented.

History

Nurse anesthesia is a relatively new specialty, with formal education for this field beginning in the early 20th century. In the early 1900's, Florence Henderson, a nurse anesthetist for Dr. Charles Mayo, recommended nurse anesthesia formal classroom education. In 1908, Agatha Hodgins, a certified registered nurse anesthetist (CRNA) for Dr. George Crile, set up the basic guidelines for the future organization of the American Association of Nurse Anesthetists (AANA) (Barash et al., 1989).

The AANA was founded in 1931 by a group of 41 nurses representing 12 states. The AANA is the professional organization for certified registered nurse anesthetists. Today, the AANA represents more than 25,000 CRNAs nationwide and

is one of the nations most dynamic health care professional organizations (Sauvage, 1991).

The AANA fulfills the following responsibilities:

1. Provides strong, enlightened leadership for the future based on assessment and evaluation of societal needs.
2. Maintains a strong government and public relations program.
3. Promotes the strengthening of practice standards, the credential mechanisms pertaining to nursing anesthesia, quality assurance, and risk management programs.
4. Continues a proactive, as well as reactive, posture as needed to protect the education and practice rights of CRNA's.
5. Continues it's activities in support of education, continuing education, and research.
6. Continues it's attempt for establishing dialogue between itself and the American Society of Anesthesiologists (ASA). (Fleming, 1986)

Nurse Anesthesia Practice and Shortage

Nurse anesthetists, as independently licensed professionals, are under legal obligation to exercise independent judgment regarding the care they provide to patients (Gunn et al., 1987). The physicians' prescription for anesthesia might be included within the anesthesia management. Gunn et al. (1987) state, "The nurse anesthetist, however, must make an independent judgment concerning the possible effect the prescription, including its constraints, will have on the patients safety and well being,

and accept, negotiate, or refuse to provide the service based on that decision" (p. 99-100).

Historically, the "Captain-of-the-ship" legal doctrine, which imputed liability to the surgeon for acts of the anesthetist, has been abolished or refused by most jurisdictions (Gunn et al., 1987). Thus, many CRNAs express a growing sense of professional independence and autonomy (Gunn et al.).

Despite this increased sense of professionalism, a great need still exists for more critical care nurses to enter this nursing specialty. One problem is that there are now fewer nurse anesthesia programs, thus there are fewer anesthesia students being educated compared to the early 1980's.

Some of the reasons why there are a reduced number of nurse anesthesia educational programs include the following:

1. The nursing shortage now exists in most parts of the country, particularly in the area of critical care nursing. This can definitely have an impact on nurse anesthesia programs, as critical care units are the pools of potential applicants. Undergraduate nursing schools also have lower enrollments and thus graduates, further adding to the shortage (Hollerbach & Hilton, 1989).

2. Zambricki and Ouellette (1987) state, "An increase in the number of anesthesiology residency spaces had been achieved at the expense of nurse anesthesia training spaces, particularly in facilities where there were coexisting nurse anesthesia educational programs" (p. 502).

3. In 1983, the Prospective Payment Legislation was passed, changing hospital reimbursements under Medicare from a cost-plus system to a prospectively determined payment system (PPS) based on diagnostic related groups (DRGs). This unfortunately gave the hospitals an incentive to stop using nurse anesthetists. Since many nurse anesthesia programs were hospital based, CRNAs lost a significant number of programs as a result of this legislation (Jordan, 1991).

4. The increase in curricular and administrative requirements set forth by the AANA caused the closing of some programs. The withdrawal of accreditation by AANA was the result of the schools insufficiently formalizing their educational programs to meet these requirements (Zambricki & Ouellette, 1987).

5. Nurse anesthesia education has moved to the graduate, university based versus the hospital based level. A student is now required to have a bachelors degree in nursing and at least one year of critical care nursing experience before acceptance into a program is considered (Jordan, 1991).

Many prospective students are working five to ten years in critical care before advancing into anesthesia. Thus, the average age upon entering an anesthesia program has increased from approximately 22 to 29 years of age. At this age, many students are married and/or have children, and thus find it difficult to bear the financial burden of returning to school, not to mention the altered family life which would result. With the nursing shortage so great in most areas of nursing, the salaries of critical care nurses are rising to more attractive levels (Jordan, 1991). There must be intrinsic and

extrinsic factors that motivate the critical care nurse into leaving job security, to venture into the highly competitive world of nursing anesthesia.

Human Need and Motivation

It is believed by many that people are born with a drive to maximize their potential as human beings, to learn all they can, to master challenges, and to fully develop and utilize their talents. This drive to grow and become all one can is manifested in all of one's activities (study, work, play and relationships) and each of these arenas provide opportunities for growth and fulfillment under the best of circumstances (Herzberg, 1966).

Bevsek and Walters (1990) state, "Motivation is the process of arousing or initiating behavior, the process of sustaining an activity in progress and channeling that activity into a given source, the state of mind which a person views a particular goal or task, or the stimulus to satisfy a need" (p. 28). Motivation may be spontaneous, personal, and colored by life's experiences. Individuals become motivated through an awareness of a need or a desire to change, which may be due to physical, psychological, or spiritual discomfort. In addition, individuals may become motivated when feeling powerful and in control, when feeling a sense of purpose, and when feeling confident in a situation. Therefore, motivation may be largely unconscious and has much to do with how individuals feel about themselves (Bevsek & Walters).

Anesthesia is a profession with great appeal for the motivated graduate nurse. In one's practice, the nurse anesthetist combines the nursing process with advanced

physiologic and psychologic principles, technical skills, and theoretical knowledge to provide in depth nursing care for each patient (Charley & Sievers, 1982). Nurse anesthesia is one of today's most demanding careers (Jordan, 1991). Much is required of the professional nurse who enters the field of anesthesia, for no anesthesia situation is without stress. The stress goes with the increased responsibility and autonomy (Jordan).

McClelland (1961) has shown that achievement-oriented people tend to translate their thinking into action. They place great demands upon themselves, are persistent and realistic, and believe in moderate risk-taking. Evidence suggests that high achievers have come from parents who set moderately high achievement goals but who are warm, encouraging, and nonauthoritative in helping them reach these goals. McClelland points out that individuals who score high in achievement motivation are motivated by the love of accomplishment, interest in their work, and by success itself.

Depression can occur in critical care nurses who are doing well. Usually it is because they do not have long-term goals or challenges (Levin, 1990). A good income is not always enough to create a fulfilled person. It is within human nature to have internal needs and desires which impact the formulation of goals.

The updating of goals will act to renew motivation and fortify determination. By setting goals or pursuing balance, a nurse is telling him/herself it can be done. In understanding human motivation, it is asserted by Deci (1975) that people choose

behaviors which they believe will lead them to desired goals. When a person achieves his/her goal, rewards may follow, which in turn may provide satisfaction.

Traditionally, motivational states are conceived as being innate or stemming from biogenic drives. According to Boshier (1971), since the 1950's, however, writers on motivation, such as Cofer and Appley (1966) have included in their schemata the concept of activity drives and regard curiosity, exploration, manipulation and the like as motives in their own right.

In order to determine the motivational factors that function as incentives or goals, nursing literature related to motivation and job satisfaction was reviewed. The provision for employee recognition, a factor broader than salary, was a major variable in motivation and job satisfaction studies within nursing as well as other disciplines (Donovan, 1980; Everly & Falcione, 1976; and Slocum, Susman, & Sheridan, 1972). The opportunity to learn and grow professionally was frequently indicated as an important motivating factor. While numerous studies (Carpenter, 1989; Conrad, 1987; Deets & Froebe, 1984; King, 1981; Parker, 1984; and Roedel & Nystrom, 1988) have addressed job satisfaction and motivational theories, few studies have dealt directly with motivational factors for entering into a nursing specialty (Brown, Chase, & Freeborn, 1987; Carpenter; and Harrison, 1987).

Dissatisfiers as Motivators

Reports in the literature suggest that job dissatisfaction is a common experience among nurses, resulting in frequent turnover (Burton & Burton, 1984; Byers, 1989; and Lysaught, 1974)). Lysaught reports that regardless of the educational level or

experience of nurses, there is a significant decline in job satisfaction, organizational commitment, and professionalism around the sixth month of employment, perhaps due to reality shock. According to Burton and Burton, nurses' expectations are for self-fulfillment, educational opportunities, good salaries, good relations with administration, autonomy, and opportunity for advancement. What nurses want most are self-fulfillment and a sense of achievement and accomplishment (Burton & Burton).

Nurses have aspirations and expectations about job goals, and there are individual differences among aspirations. According to Shaughnessy (1990), unmet aspirations are a major source of job dissatisfaction. This dissatisfaction may become a motivational factor to enter the nursing specialty of anesthesia.

Some nurses may find their present work incentive system so unappealing that they no longer are motivated to work at that job. Others may become dissatisfied because inflated expectations of rewards associated with work do not match the rewards given. They may be motivated to advance their education into a nursing specialty in order to attain the job satisfaction. This may substantiate Herzberg's Two-factor Theory of Job Needs and Job Satisfaction (Herzberg, Mausner, & Snyderman, 1959). Certain intrinsic factors (motivators or satisfiers) relating to achievement, recognition, challenging work, responsibility, and opportunity for advancement can lead to high job satisfaction.

Satisfiers as Motivators

Money may be a motivating factor of critical care nurses entering anesthesia education since a starting salary of \$70,000 dollars per year is not uncommon. According to Greenberg & Levine (1971), anesthesiology was the only specialty in which a nurse could earn enough money to support a family, and that money was the major, if not the sole, motivating factor for his/her entering this specialty (Greenberg & Levine). Although money can be a motive in its own right, it can be used to represent other motives. However, since money means something different to everyone, its value may need to be assessed on an individual basis. Many studies show that salary is a very important component of job satisfaction (Harrison, 1987; Ruffing, Smith, & Rogers, 1984; Suresh et al., 1977). Other studies, however, claim it is not a primary factor (Brown et al., 1987; Carpenter, 1989; Deets & Froebe, 1984; Floyd & Smith, 1983; and Roedel & Nystrom, 1988). For example, one study reported that psychological rewards are more important than salary or social rewards (Burton & Burton, 1984).

In a study of intensive care nurses, Dear (1982) identified perceived autonomy as the strongest determinant of job satisfaction. Mortimer, Finch and Maruyama (1985) examined the relationship of autonomy, income, and work overload to job satisfaction. According to gender, Mortimer et al., concluded that, generally speaking, work autonomy significantly influences the job satisfaction of men but not women.

A study done by Brown et al. (1987) related increased autonomy with job satisfaction. Where CRNAs had some involvement in the administration of regional

anesthesia to patients, 77% indicated that their job satisfaction would decline if regional anesthesia were done exclusively by a physician; none reported job satisfaction levels would increase.

The level to which a nurse's career has advanced may be an indication of job satisfaction. In 17 studies of job satisfaction reviewed by Herzberg et al. (1957) in which information regarding occupational level was reported, higher job satisfaction was attained at the higher occupational level.

Hackman and Oldham's (1976) Job Characteristics Model of Motivation mentions growth need strength as a mediating variable. Growth need strength, as a mediating variable, can be described as the degree to which an individual wishes for job opportunities for meeting the psychological needs of learning, personal accomplishment, and self-direction. The theory states persons having a high degree of growth need strength will also be highly motivated (Hackman & Oldham).

Lawler and Hall (1970) studied the relationship of job satisfaction and intrinsic motivation in a population of research scientists holding jobs that were supposedly already designed to provide high measures of job satisfaction, autonomy, and job motivation. Job satisfaction proved to be related to such job characteristics as the amount of control (autonomy) the job provided the holder. Nurse anesthesia is noted for its high levels of autonomy, especially if practicing in rural areas (Grundy et al., 1987).

In research studies done on job satisfaction in nursing, several factors were identified which motivated nurses to move on to different jobs or drop out of nursing

altogether. In a study done by Gibson and Dewhirst (1986), content of the job itself, working conditions, and organizational factors were three dissatisfiers which motivated nurses to change jobs or careers. If the problems of these factors became severe, nurses tended to react by emphasizing income more than intrinsic rewards of work and tried to move on or change jobs if given a chance. Many nurses also identified insufficient challenge as a source of discontent. Such a finding suggests that some nurses want greater job involvement in terms of responsibility for patient care and variety of duties. In a study by Oechsle and Landry (1987), among the intrinsic factors towards job satisfaction that ranked the highest were challenge on the job, use of nursing judgment, use of skills, and responsibility.

The Motivation Maintenance Theory developed by Frederick Herzberg contends that two sets of factors can impinge on job satisfaction. Hygiene factors such as working conditions and salary can lead to job dissatisfaction. Motivators, such as job content and professional achievement are job satisfaction factors (Herzberg et al., 1957). In a study by Janelli and Jarmuz (1987) concerning motivational factors for retaining nurses, it was found that the results of the survey were in support of Herzberg's theory. Hygiene factors are primarily related to job dissatisfaction, while motivation factors are primarily related to job satisfaction.

Motivating characteristics include participation, autonomy, and responsibility. Chung and Ross (1977) have shown that these appeal to the person who strives for the satisfaction of higher order needs. Anesthesia can provide these higher order needs. Well motivated behavior arises from orientation toward a goal (Chung & Ross).

Hackman and Lawler (1971) took the psychological aspects of work motivation, added job satisfaction, and developed a conceptual framework specifying the conditions under which jobs will facilitate the development of internal motivation. They found that when jobs were high on four core dimensions (variety, autonomy, task identity, and feedback), people who were desirous of higher order satisfaction tended to be highly motivated.

In some studies, the most significant factors relating to job satisfaction among health professionals included pay, autonomy, task requirements, organizational requirements, interaction and job status (Brown et al., 1987). A study that specifically analyzed job satisfaction among nurse anesthetists was conducted by Brown et al., who surveyed 284 CRNAs and identified six job factors as being major determinants: anesthesiologist support, autonomy, interactions, pay, the work itself, and working conditions.

Abraham Maslow's lower order needs (safety and physiological), and Frederick Herzberg's dissatisfiers, which look at extrinsic factors in employment (money, protection, stability in ones environment, security, protection, and belonging) seem to imply extrinsic motivators. Intrinsic motivators or Maslow's higher order needs, which compare to Herzberg's employment satisfiers include: respect of others, prestige, recognition, sense of competence, need to fulfill ones self, achievement, responsibility, advancement, growth, recognition, and work itself (Byers, 1989).

It is clear from the literature review that many factors exist, intrinsic as well as extrinsic, that motivate people to strive for career fulfillment. Motivational factors

which continually present themselves are autonomy, increased responsibility, variety, personal goals, and working conditions.

In the growth-motivated self actualizing person, motivational impulses, which may lead to changes, are desired and welcomed rather than rejected and feared. Gratification increases motivation and heightens excitement. Instead of wanting less and less, the person wants more of say, education and knowledge. In a sense, these motives can never be satisfied because growth is continuing (Boshier, 1971).

Summary

In the past three decades, job satisfaction and motivation have been vigorously pursued and researched. Findings in the nursing literature support the suggestion that there are intrinsic and extrinsic factors which motivate many critical care nurses to further advance their careers. Some of the intrinsic factors may include increased responsibility and autonomy, achievement, recognition, challenging work, and opportunity for advancement. Extrinsic factors, although not the main motivating factors, may also play a part. These include such things as interpersonal relations, salary, company policy, administration and working conditions. Unmet aspirations and expectations may be a source of job dissatisfaction among some critical care nurses, thus providing another source of motivation to enter nursing anesthesia.

This study identifies the specific extrinsic and intrinsic motivational factors impelling the critical care nurse to enter nursing anesthesia. Studies show that decreased job satisfaction, as well as other factors, play a crucial role in motivating a registered nurse to enter a specialty area, such as nursing anesthesia. Each nurse is

different. Some nurses are content with working in a critical care unit, such as intensive care, and some are dissatisfied and want to advance to another field. The studies support the idea that nurses entering an educational program to further specialize and advance their careers may have done so as a result of several reasons. Perhaps they have set prior goals, have need for personal growth, feel the need for more responsibility and autonomy, want increased monetary rewards, and/or desire a change in working conditions (e.g., desire to have faster patient turnover in their jobs).

This study uncovers the main motivational factors of why critical care nurses advance into the specialty area of nurse anesthesia. Becoming aware of these factors, hospital administrators, CRNA educators, the AANA, etc., may be better able to help prevent, and perhaps decrease the advancement of, the CRNA shortage.

CHAPTER III

METHODOLOGY OF THE STUDY

This non-experimental descriptive study was designed to determine what factors motivate critical care registered nurses to enter a graduate educational program for nursing anesthesia. This chapter will cover the methodology including a tool developed for data collection and data analysis.

Population

The population in this study consists of first year nurse anesthesia students in Master of Science (MS) in nursing degree programs. The target population was those students who have entered one of the anesthesia programs in two north central states.

Sample

A convenience sample of first year nurse anesthesia students was drawn from three CRNA graduate nursing programs in two north central states. The total population of first year CRNA students in this area was sixty-three from five programs. The sample size consisted of fifty-one CRNA students from three different MS in nursing degree educational programs.

Study Design

The design utilized for this study was a non-experimental descriptive survey. The purpose of this study was to describe and document the intrinsic and extrinsic motivational factors which impelled critical care nurses to enter graduate nurse

anesthesia programs, in terms of frequency of occurrence and order of priority (Polit & Hungler, 1987). In this study, the motivational factors were the independent variables and being a first year anesthesia student was the dependent variable.

Data Collection

Approval to approach the students was obtained through the school program directors. A time was set up which correlated with a class period so all students were approached at the same time. The questionnaire was delivered in person by the researcher at the three program sites. The first year students were presented with a verbal description and purpose of the study, their participation was solicited, and questions were answered. The researcher collected the questionnaires upon subjects completion. Return of the completed questionnaires comprised consent to participate. Survey questionnaires, along with stamped, pre-addressed envelopes, were left with the program director for the students who were not present.

The questionnaire packet consisted of a cover letter, a demographic data form, and the motivational factor data forms. Demographic data collected included the participants age, gender, marital status, number of children, financial responsibilities, number of years as a critical care nurse, and total number of years in nursing practice.

Instrument

The tools for this study were developed by the researcher to reflect those relevant satisfier/dissatisfier factors as identified in the literature. Parts of three questionnaires used in previous studies were adapted to formulate the survey questionnaire. Those include: demographic data from the study of Job Satisfaction and

Mobility of Nursing Educators Questionnaire by Ann L. Marriner (1977); projected versus self-reason rank order form adapted from the study entitled *College Bound - But Why?* by Dagmar Brodt (1969); and intrinsic and extrinsic factor adapted and modified from the survey entitled *Choice of Teaching Nursing as a Career Questionnaire* by Frances M. Farthing (1968). The instrument was based on the assumption that persons motivated to enter a nurse anesthesia educational program have a characteristic set of intrinsic and extrinsic interests.

The questionnaire consisted of seven demographic items which formed the first section of the questionnaire. The second part was composed of 16 intrinsic and 16 extrinsic factors, all of which were rated by the subject on a five-point Likert scale from "1" equals least describes me to "5" equals best describes me. Intrinsic and extrinsic factors were mixed throughout this section. Subscales included intrinsic factors (autonomy, growth, competence, and self-actualization) and extrinsic factors (finance, belonging, security, and stability). Each subscale was assessed by two positive questions (items) and two reverse scored, negatively stated questions (items). Items 2, 4, 5, 7, 9, 11, 14, 15, 17, 18, 21, 22, 24, 25, 28, and 30 were stated negatively and were reverse scored to control for response set bias. Section three asked the subject to rank in descending order of priority twelve reasons why critical care nurses pursue graduate nurse anesthesia education. The twelve reasons are first ranked in a general professional sense and second as they applied to the individual subject. A pilot study was initiated involving nine second year University of North Dakota graduate nursing anesthesia students. Following the results of the pilot study,

appropriate modifications were made. The time required to complete the questionnaire packet ranged from 10 to 20 minutes.

Instrument Reliability and Validity

The goal, when developing the instrument, was to adequately represent the hypothetical content universe in the correct proportions.^{Q^P} Content validity was assumed, as the questionnaire was formulated based on three research tools previously tested and used, and the research findings from these three previous studies; the literature; self-perceived motivational factors; and the use of content experts.

A pilot test was done by distributing the survey questionnaire to second year nurse anesthesia students at the University of North Dakota on two occasions. The pre-test was followed by the post-test two weeks later. Demographic factors were excluded. The stability and internal consistency of the instrument was found to be moderate to strong.

Stability was assessed using Pearson correlation and was found to be moderate to strong. The average correlation for projected reason rank between the pre- and post-test resulted in $r = 0.69$. The average correlation for self-reason rank between the pre- and post-test ranked the highest at $r = 0.79$. The average correlation for projected/self rankings pre-test $r = 0.62$, ranked closely with the average correlation for projected/self rankings post-test, $r = 0.60$.

Instrument reliability for this study was determined using Cronbach's alpha. Internal consistency was moderate to strong, except for the security subscale, with alpha coefficients for subscales ranging from .26 to .87. The total scale alpha equaled

.82 for the 51 subjects. The overall reliability for extrinsic factors was .80, and it was .73 for intrinsic factors (see Table 1).

Data Analysis

The study involved a descriptive data analysis of the demographic and univariate factors surveyed. The descriptive data analysis includes the frequency, percent, range, mean and standard deviation as appropriate.

The questionnaire uses a five-point Likert scale in order to analyze the data, therefore quantitative analysis involving a total scale score was used. Data were analyzed using analysis of variance (ANOVA). Subscales of intrinsic and extrinsic factors addressed the following areas: intrinsic factors (autonomy, growth, increased sense of competence, and self-actualization); extrinsic factors (belonging, financial, security, and stability in environment). Pre- and post-test stability was assessed on the pilot test using Pearson correlation. Instrument reliability for this study was determined using Cronbach's alpha. Probability level was set at $p \leq .05$.

Protection of Human Subjects

The subjects were instructed on the nature, length and purpose of the study. Participation in the survey was strictly on a voluntary basis. Subjects were informed of any benefits and effects expected, and that no monetary compensation would be given for participating in the study. All questions asked by the participants were answered to the best of the researchers ability.

Table 1

Mean, Standard Deviations, and Cronbach Alpha Coefficients for Intrinsic and Extrinsic Subscales (N= 51)

Subscale	# Items	Mean	Standard Deviation	Alpha
Autonomy	4	3.96	.59	0.61
Finance	4	3.61	.82	0.87
Growth	4	3.87	.53	0.41
Belonging	4	3.87	.62	0.38
Competence	4	3.70	.41	0.34
Security	4	3.95	.52	0.26
Self-Actualization	4	4.61	.37	0.48
Stability	4	3.54	.65	0.55
Total Intrinsic	16	4.03	.35	0.73
Total Extrinsic	16	3.74	.45	0.80
Overall Total	32	3.89	.30	0.82

Confidentiality and anonymity were assured. The subjects were instructed that they may decline from answering individual questions if they so desired and maintain the right to withdraw at anytime without repercussions. The subjects consent to participate was assumed if the instrument was completed and returned. Approval from

the directors of nurse anesthesia programs was given. The design for the study was approved by the University of North Dakota Institutional Review Board.

CHAPTER IV

RESULTS

The purpose of this study was to identify those intrinsic and extrinsic factors which motivate critical care registered nurses into entering a graduate nurse anesthesia educational program. Analysis of data was accomplished using the statistical analysis system (SAS) personal computer program. This chapter will begin with a discussion of the study sample followed by the presentation and analysis of the data.

Description of the Sample

A convenience sample of fifty-one first year nurse anesthesia students from three different north central educational programs were surveyed. The questionnaire was hand delivered to 51 students for a 100 percent return rate. Demographic data included the participants age, gender, marital status, number of children, financial responsibilities, number of years as a critical care nurse, and total number of years in nursing practice. Eighteen males (35.3%) and 33 females (64.7%) participated in the study. The age of the subjects ranged from 23 to 39 years with a mean of 31.16 years (SD= 4.53). The majority of nurses (56.8%) were 31.16 years of age or younger, as noted in Table 2.

The majority (n= 34, 66.6%) of the 51 subjects were married (one subject in the group did not report marital status). The majority of subjects (n= 32, 62.7%) reported they had no children at the time of entering their nurse anesthesia program

Table 2

Sample Profile (Demographic Characteristics)

Characteristic	Frequency	%
Age in years (Mean = 31.16, SD= 4.53)		
23	1	2.0
24	3	5.9
25	2	3.9
26	3	5.9
27	2	3.9
28	6	11.7
29	4	7.8
30	3	5.9
31	5	9.8
32	3	5.9
33	1	2.0
34	3	5.9
35	4	7.8
36	1	2.0
37	5	9.8
38	4	7.8
39	1	2.0

Table 2

Sample Profile (Demographic Characteristics) (continued)

Characteristic	Frequency	%
Marital Status		
Single	11	21.6
Married	34	66.6
Widowed	0	0.0
Divorced	4	7.8
Separated	1	2.0
Frequency Missing = 1		2.0
Number of Children (Mean= .80, SD= 1.22)		
0	32	62.7
1	6	11.8
2	6	11.8
3	5	9.8
42		3.9
Primary Financial Support		
Yes	21	41.2
No	30	58.8

(Table 2). The majority ($n=30$, 58.8%) of subjects were not the primary financial support provider upon entering a nurse anesthesia program (Table 2).

Number of years worked in a critical care unit prior to entering a nurse anesthesia program is listed in Table 3. The majority of students have worked four years or less in critical care nursing (56.7%).

Total number of years worked in the nursing profession is listed in Table 4. The majority (52.9%) have worked seven years or less in the nursing profession.

Extrinsic/Intrinsic Motivating Factors in Pursuing Graduate Nurse Anesthesia Education

Analysis of variance (ANOVA) procedures were used to test for significant differences between extrinsic and intrinsic factors as well as differences in each of the subscales according to the demographic factors to answer the research question: "What are the intrinsic and extrinsic factors which motivate critical care registered nurses (RNs) to pursue graduate education in nursing anesthesia?"

The degrees of freedom in this study were determined using one way analysis of variance (ANOVA), by taking the number of subjects ($N=51$) times the number of levels (means) to determine the pieces of data. The degrees of freedom for the total is always the total number of observations minus one. The degrees of freedom for the model is always the number of levels (means) minus one. The error degrees of freedom is the difference, total df minus model df (Neter, Wasserman, & Kutner, 1985).

Table 3

Frequency and Percent of Number of Years Worked in Critical Care(N=51)

Years in Critical Care	Frequency	%
(Mean= 5.37, SD= 3.89)		
1	4	7.8
2	11	21.5
3	7	13.7
4	7	13.7
5	3	5.9
6	3	5.9
7	3	5.9
8	1	2.0
9	2	3.9
10	4	7.8
11	1	2.0
13	3	5.9
14	1	2.0
15	1	2.0
Total	51	100.0

Table 4

Frequency and Percent of Number of Years Worked in the Nursing Profession (N= 51)

Years in Nursing Profession	Frequency	%
(Mean= 8.08, SD= 4.77)		
2	4	7.8
3	6	11.8
4	6	11.8
5	4	7.8
6	4	7.8
7	3	5.9
8	3	5.9
9	2	3.9
10	5	9.9
11	1	2.0
12	3	5.9
15	4	7.8
16	4	7.8
17	2	3.9
Total	51	100.0

There were significant differences in the average ratings of the eight subscales which include autonomy, finance, growth, belonging, competence, security, self-actualization, and stability ($F = 16.81$, $p = 0.001$, $df = 7, 400$). Duncan's multiple range test for variables was used to test for the level of significance. The highest rankings were given to the self-actualization subscales and the average for this subscale was significantly higher than others (mean = 4.61, $SD = .37$). Finance (mean = 3.61, $SD = .82$) and stability subscales (mean = 3.54, $SD = .65$) received the lowest ratings (see Table 1 and Figure 2).

In reference to ANOVA, the following groups (levels) were formulated to provide a measurable number of groups with proportional percentages. Age consisted of four levels: 23-25; 26-30; 31-35; and 36 or more years. Marital status contained three levels: single; married; and other. Gender was expressed as either male or female, followed by primary financial support provider which was grouped as yes or no responses. Number of children consisted of three levels: none; one; and two or more. Years worked in critical care and years worked in the nursing profession both contained four levels: 1-2; 3-5; 6-10; and 11 or more years. The only demographic factor for which there was a significant difference using ANOVA was the number of children ($F = 11.81$, $p = 0.001$, $df = 2,377$) (Table 5).

Significant differences were found between the total of the four intrinsic subscales and the total of the four extrinsic subscales ($F = 13.65$, $p = 0.001$, $df = 1,100$). Respondents tended to rate the intrinsic subscales higher (mean = 4.03, $SD = .35$) than

Figure 2
Average Subscale Ratings of Intrinsic
and Extrinsic Motivational Factors

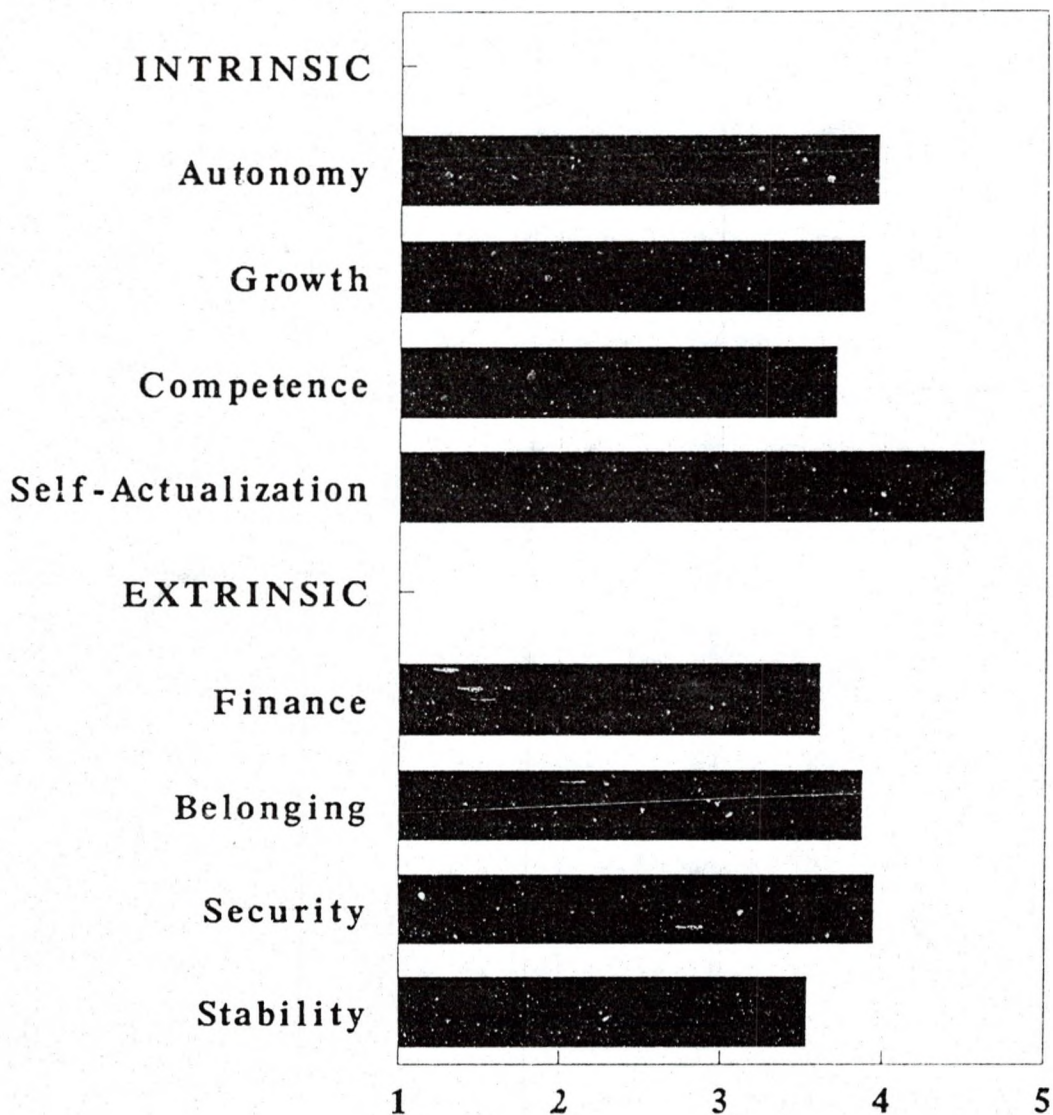


Table 5

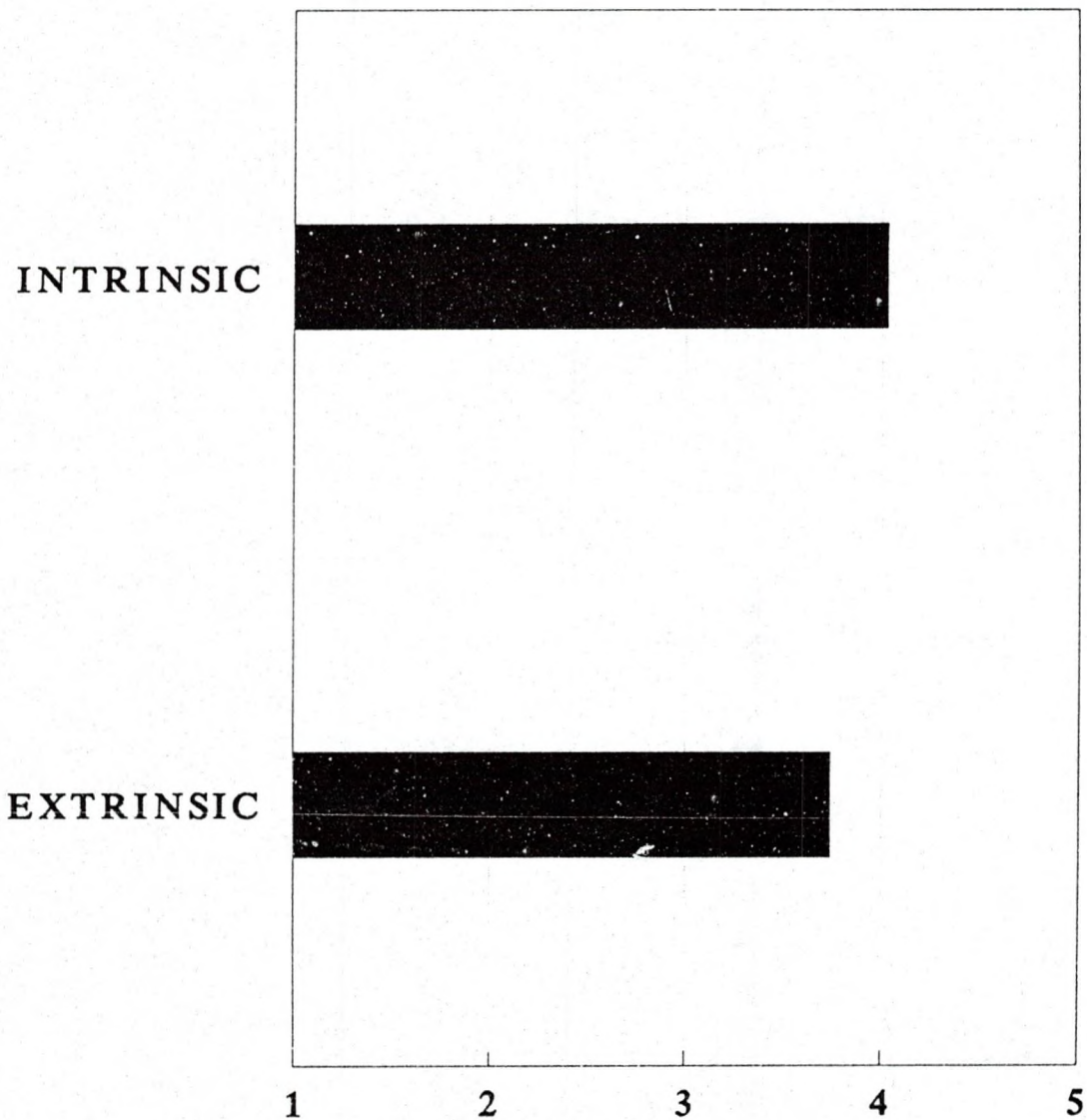
ANOVA for Demographic Class Level Information as Related to the Four Intrinsic and Four Extrinsic Subscales (N= 51)

Scale	F Value	p
Age	1.04	0.37
Marital Status	1.99	0.14
Gender	0.78	0.38
Primary Financial Support	0.00	----
Number of Children	11.8	10.00
Years Worked in Critical Care	1.01	0.39
Years Worked in the Nursing Profession	1.56	0.20

they did the extrinsic subscales (mean= 3.74, SD= .45) (Table 1 and Figure 3). As noted in Table 6, the number of children was also found to be significant on this analysis ($F= 5.97$, $p= 0.004$, $df= 2,83$).

The second portion of the analysis explored differences according to demographics on each scale separately. Using ANOVA, demographic class levels were the dependent variables, and the extrinsic and intrinsic scales were the independent variables. Females scored lower on the autonomy scale (mean= 3.83, SD= .53) than did males (mean= 4.18, SD= .64) ($F= 4.35$, $p= 0.04$, $df= 1,49$).


Figure 3
Average Overall Ratings Of Intrinsic
and Extrinsic Motivational Factors



. Intrinsic Subscale Average: 4.03

. Extrinsic Subscale Average: 3.74

ss Level Information (Total of Extrinsic and Intrinsic

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Primary Financial Support

Number of Children

Years Worked in Critical Care

Years Worked in the Nursing Profession

F Value

p

0.53

0.66

1.01

0.37

0.39

0.53

0.00

5.97

0.00

0.51

0.68

0.79

0.51

Subjects, in relation to number of children, were categorized into one of three groups: no children; one child; or two or more children. Those with two or more children tended to give the lowest ratings on all scales except the scale of increased level of competence. Using ANOVA, differences were significant on the growth ($F=3.87$, $p=0.03$, $df=2,96$), finance ($F=3.19$, $p=0.05$, $df=2,96$), total extrinsic ($F=3.38$, $p=0.04$, $df=2,96$), and total extrinsic and intrinsic combined ($F=5.81$, $p=0.01$, $df=2,96$) subscales.

Projected and Self Rankings of Reasons for Entering Program

ANOVA procedures tested differences in mean item rankings for projected versus self rankings. Differences in average rankings of the 12 items were significant (projected $F = 27.14$, $p = 0.001$, $df = 11,550$; self $F = 20.80$, $p = 0.001$, $df = 11,550$).

Projected and self-reason ranked items as presented on the questionnaire include:

1. Employment with more individual responsibility and autonomy.
2. Critical care nursing did not offer a sufficient career ladder for further advancement.
3. To obtain a Master's Degree.
4. To advance within the nursing profession through specialization.
5. To obtain increased job security with greater financial rewards.
6. To increase knowledge by having the opportunity to more closely associate pharmacology with physiology of disease processes.
7. To obtain more prestige within the health care field as well as society in general.
8. Employment with more convenient hours.
9. Offers intellectual challenge with more one-to-one patient contact.
10. Entered nursing as an educational base (i.e., stepping stone) with the goal of nursing anesthesia.
11. The choice to do this just seemed to evolve on its own (i.e. fate).

12. Anesthesia offers areas of specialization such as OB/GYN, orthopedics, pediatrics, etc. which one can enter, as well as a general variety of patients.

"Employment with more individual responsibility and autonomy" (Item 1) was the most important self-reason for pursuing education in nursing anesthesia (mean= 2.61, SD= 2.14). This was followed by items 5, 9, 4, and 6 respectively. These four items presented with average rankings in the 4.2 - 5.4 range (see Table 7).

As may be noted in Table 7, item 11 received the least important self rating (mean= 9.43; SD= 3.20). Items 12, 10 and 7 followed in terms of least important mean rankings respectively.

Item 1 was given the most important average ranking (mean= 2.76, SD= 2.14) for projected reasons, as it was for self-reasons, however, it was not significantly different than item 5 which had an average ranking of 3.18, and a SD of 2.61. These two were followed by a grouping of three (items 9, 2, and 4 respectively) with average mean rankings in the 4.5 - 4.9 range (Table 8). As noted in Table 8, item 11 received the least important projected rankings (mean= 9.76, SD= 3.03), as well as self rankings, and item 12 was next to the lowest ranked item for both self and projected rankings. The three top ranked items were the same for both self and projected reason rankings. A comparison of self and projected rankings for the 12 items is presented on Figure 4.

Table 7

Self-Reason Ranking Identified as Highest to Lowest

Item	N	Mean	SD
1	51	2.61	2.14
5	51	4.27	3.14
9	51	4.45	2.75
4	51	4.98	3.15
6	51	5.41	2.52
2	51	5.76	3.29
3	51	6.65	3.55
8	51	6.69	3.17
7	51	7.86	2.96
10	51	8.06	3.82
12	51	8.14	3.03
11	51	9.43	3.20

The item which had the greatest change in position from self-reason ranking to projected reason ranking was item 3 (To obtain a Master's Degree). The item was ranked in seventh position (mean= 6.65, SD= 3.55) in self reason ranking and in tenth

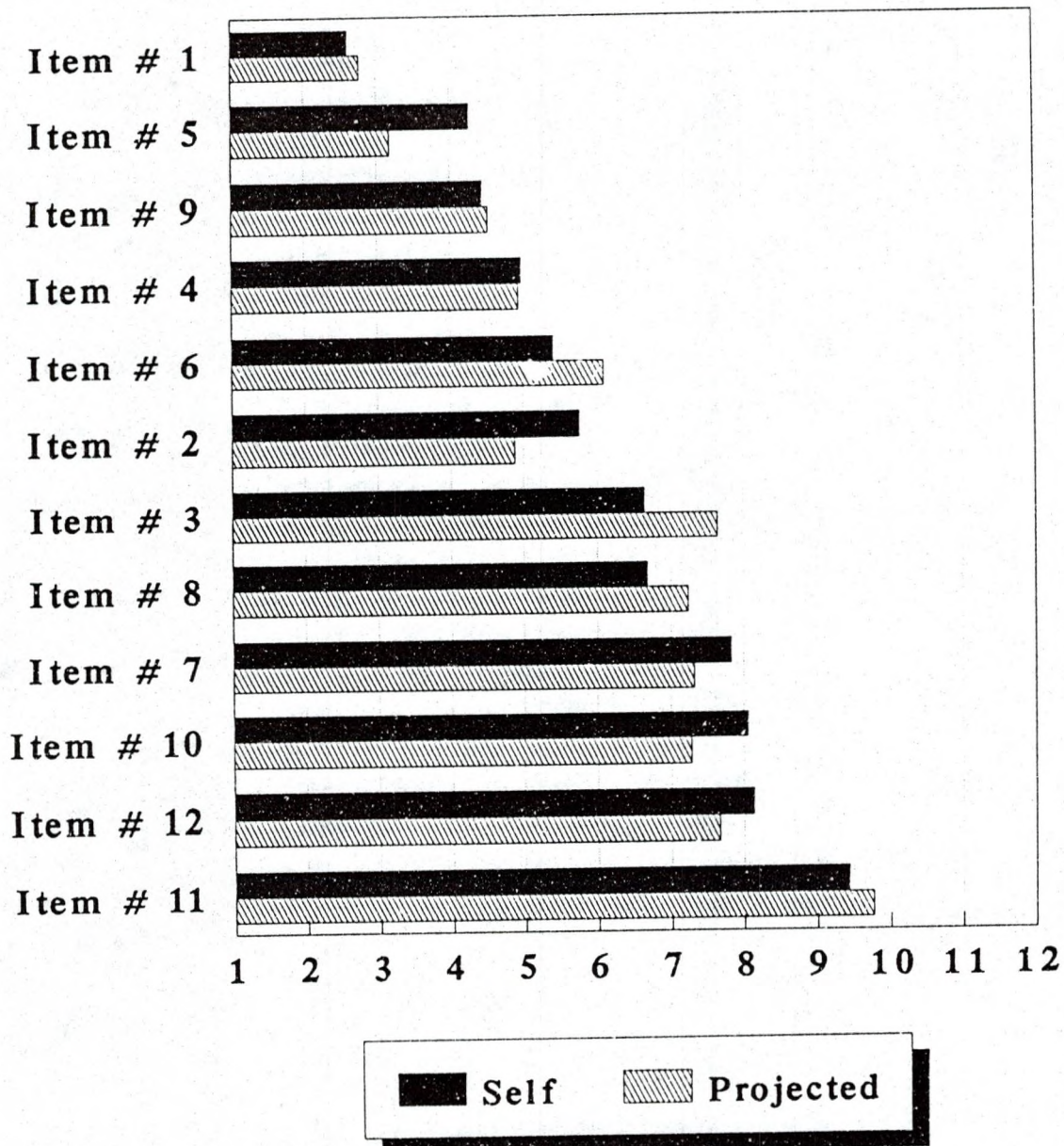
Table 8

Projected Reason Rankings Identified as Highest to Lowest

Item	N	Mean	SD
1	51	2.76	2.14
5	51	3.18	2.61
9	51	4.53	2.65
2	51	4.88	3.11
4	51	4.94	3.11
6	51	6.10	2.71
8	51	7.24	3.39
10	51	7.27	3.24
7	51	7.31	2.98
3	51	7.65	3.00
12	51	7.67	3.03
11	51	9.76	3.03

position (mean= 7.65, SD= 3.00) in projected reason rankings. Differences were not found in rankings according to any of the demographic variables.

Figure 4
Comparison of Self & Projected Rankings
of Reasons For Pursuing
Nursing Anesthesia Education
(1=Most Important, 12=Least Important)



CHAPTER V

DISCUSSION AND CONCLUSIONS

The purpose of this study was to identify intrinsic and extrinsic factors that motivate critical care nurses in entering a graduate nurse anesthesia program. This study was based on the assumption that nurse anesthesia students have higher level needs than the basic physiological and safety needs and were able to self-assess those needs.

Summary and Discussion

There have been numerous indications in the literature that motivational factors do exist and play an important role in job satisfaction. While numerous studies (Carpenter, 1989; Conrad, 1987; Deets & Froebe, 1984; King, 1981; Parker, 1984; and Roedel & Nystrom, 1988) have addressed job satisfaction and motivational theories, few studies have dealt directly with motivational factors for entering into a nursing specialty (Brown et al., 1987; Carpenter; Harrison, 1987).

To assess the extent to which different motivational factors affected the decision making process to pursue a graduate nurse anesthesia program, a researcher designed questionnaire was distributed to 51 first year anesthesia graduate students in three major northcentral schools. The convenience sample survey resulted in a 100% return rate.

Demographics

A number of demographic factors were assessed, including age, gender, marital status, number of children, financial responsibilities, number of years as a critical care nurse, and total number of years in nursing practice. Eighteen males (35.3%) and 33 females (64.7%) participated in the study. This is consistent with the acknowledgement by Brown et al. (1987), that most CRNAs are female. The age of the subjects ranged from 23 to 29 years with a mean of 31.16 years ($SD = 4.53$). The majority ($n = 34$, 66.6%) of the 51 subjects were married. Thirty-two subjects or 63.0% reported they had no children at the time of entering their nurse anesthesia program. Over one-half of the participants ($n = 30$, 58.8%) were not the primary financial provider. The greatest number of students (56.7%) have worked four years or less in critical care nursing before entering anesthesia training. The majority (52.9%) have worked seven years or less in the nursing profession in general.

Motivational Factors

Results of the study indicate that motivational factors do play an important role in seeking a career in a nursing specialty. Anesthesia is a profession with great appeal for the motivated graduate nurse. In this profession, the nurse anesthetist combines the nursing process with advanced physiological, pharmacological, and psychological principles, technical skills, and theoretical knowledge to provide in depth nursing care for each patient (Charley & Sievers, 1982).

Employment with more individual responsibility and autonomy was the most important projected and self-reason for pursuing graduate education in nursing

anesthesia. This finding is supported by a number of sources (Brown et al., 1987; Carpenter, 1989; and Harrison, 1987). What nurses want most are self-fulfillment and a sense of achievement and accomplishment (Burton & Burton, 1984). In relation to Herzberg's Two-Factor Theory of Job Need and Job Satisfaction, certain intrinsic factors (motivators or satisfiers) relating to achievement, recognition, challenging work, responsibility, and opportunity for advancement can lead to high job satisfaction (Herzberg et al., 1959). In a study of intensive care nurses, Dear (1982) identified perceived autonomy as the strongest determinant of job satisfaction. Intrinsic motivators of Maslow's higher order needs, which compare to Herzberg's employment satisfiers include: sense of competence, need to fulfill ones self, achievement, responsibility, advancement, and growth (Byers, 1989).

At least one year in critical care nursing is required before it is possible to pursue graduate nursing anesthesia. In this study it was found that most subjects (56.7%) had one to four years experience. This may be ample time to discover a desire to work autonomously in stressful situations. According to Jordan (1991), much is required of the nurse anesthetist, for no situation is without stress. The stress goes hand-in-hand with the increased responsibility and autonomy. In a study by Oechsle and Landry (1987), among the intrinsic factors towards job satisfaction that ranked the highest were challenge on the job, use of nursing judgment, use of skills, and responsibility. Even though critical care nursing requires decision making in stressful situations, nurse practice act guidelines must be followed and autonomy may be limited. In many instances a physicians order must be obtained before initiating action. AANA

guidelines state, "The CRNA may practice independently, interdependently, or dependently according to his/her expertise, state statute, and institutional policy" (Grundy et al., 1987, p. 1130).

It was interesting to note females scored significantly lower (mean= 3.83, SD= .53) on the autonomy scale than did males (mean= 4.18, SD= .64) ($F= 4.35$, $p= 0.04$, $df= 1,49$). This may be the result of the socialization process during growth and development stemming from childhood. Historically, parents expect their male children to be reserved, forceful, self-confident, tough, realistic, and assertive; and their female children to be gentle, dependent, high strung, talkative, frivolous, and impractical (Bem, 1975; Williams, Bennet, & Best, 1975). Mortimer et al. (1985) examined the relationship of autonomy, income, and work overload to job satisfaction. According to gender, Mortimer et al. concluded that generally speaking, work autonomy significantly influences the job satisfaction of men but not women. Results of this study reveal a high level of individual responsibility and autonomy must be felt by either gender in order to pursue nursing anesthesia. Employment with more individual responsibility and autonomy ranked highest for both sexes in projected and self-reason rankings.

"To obtain increased job security with greater financial rewards" was the second most important projected and self-reason for pursuing education in nurse anesthesia. This is consistent with a study by Levin (1990), which reveals a good income is not always enough to create a fulfilled person. It is within human nature to have internal needs and desires which impact the formulation of goals. When a person

achieves his goal, rewards may follow, which in turn provide satisfaction (Deci, 1975). One study reported that psychological rewards are more important than salary or social rewards (Burton & Burton, 1984).

The mean age of participants was 31.16 years ($SD = 4.53$) and most were married (66.6%). Perhaps these factors reflect an increased need for employment security. Since job security with greater financial rewards ranked high on both projected and self-reason ranking scales, it proved to be a motivating factor in this study. A starting salary of CRNAs of \$70,000 dollars per year is not uncommon. Many studies show that salary is a very important component of job satisfaction (Harrison, 1987; Ruffing et al., 1984; Suresh et al., 1977).

It was found that when extrinsic and intrinsic factors were assessed in relation to the eight subscales, finance and stability received the lowest ratings. A lack of congruency in relation to finance exists with these findings when compared to the projected and self-reason ranking results where greater financial rewards ranked second. Frederick Herzberg's Theory of Job Satisfaction and Motivation relates factors extrinsic to work as dissatisfiers (not major motivators) which include job, salary, company policy, administration, and working conditions (Herzberg, 1966). Stability was not directly assessed in the twelve projected and self-reason rankings.

"The choice to do this just seemed to evolve on its own (i.e. fate)" ranked the lowest on both the projected and self-reason scales. This also signifies that major decisions do not just happen, and a person must have goals, needs, wants, and desires

in addition to being highly motivated in order to pursue an education in graduate nurse anesthesia.

Security ranked third out of the eight subscales, which is comparable with a ranking of second in relation to the twelve projected and self-reason rankings. Security thus ranked as one of the overall leading motivators behind increased autonomy, responsibility and self-actualization. Nursing anesthesia offers job security in that there is such a shortage of CRNAs nationwide. In 1975, 210 accredited nurse anesthesia educational programs existed, with between 1,100 to 1,200 graduates annually. This is contrasted to 1990 figures of approximately 80 accredited programs with close to 700 graduates per year (Jordan, 1991). In February of 1990, the US Department of Health and Human Services (HHS) identified a shortage of approximately 6,000 to 7,000 CRNA's, and projected a need for a total of 35,000 by the year 2010. To meet this need, it is projected that 1,800 nurse anesthetists must be educated annually through the year 2000 and 1,500 annually thereafter (National Center for Nursing, 1990).

Comparison of Extrinsic and Intrinsic Factors

Using analysis of variance (ANOVA) to explore the differences between extrinsic and intrinsic factors, it was found that self-actualization ranked significantly higher (mean 4.61, SD= .37) than that of the other scales based on the statistical analysis system (SAS). Autonomy ranked second with a mean of 3.96 (SD= .59). Autonomy, according to Maslow (1970), is a characteristic of self-esteem and self-actualization. Self-actualization is the highest level need in Abraham Maslow's

hierarchy of human needs theory (Maslow). Brunner (1983) states, "According to Maslow, actualization can be attained as one acquires the ability to direct one's own life; this frequently happens when one advances and obtains additional job responsibilities" (p. 25).

In this study the major demographic factor for which there was a significant difference was the number of children ($F= 11.81$, $p= 0.001$, $df= 2,377$) in relation to the eight subscales individually. A significant difference in the number of children was also found between the total of the four intrinsic and the total of the four extrinsic subscales ($F= 5.97$, $p= 0.01$, $df= 2,83$). Those with two or more children tended to give the lowest ratings on all scales except the scale of increased level of competence. This may signify that participants with two or more children are more family oriented and less motivated to pursue a career in nursing anesthesia based on higher level employment needs.

Respondents tended to rate the intrinsic scales higher (mean= 4.03, SD= .35) than they did the extrinsic scales (mean= 3.74, SD= .45). Thus, intrinsic factors (autonomy, growth, increased sense of competence, and self-actualization) were rated higher than extrinsic factors (financial, belonging, security, and stability in environment). This finding is congruent with both Abraham Maslow's Hierarchy of Human Needs theory and Frederick Herzberg's Motivation-Hygiene theory. According to Maslow (1970), a higher level need does not motivate a person until the lower, more basic needs are first satisfied, but once a lower-level need is satisfied, it no longer motivates. Thus the findings of this study may indicate that most lower-level

needs are satisfied in relation to critical care nurses pursuing a graduate nurse anesthesia educational program. According to Herzberg (1966), motivators (satisfiers) are factors intrinsic to work and include recognition, achievement, possibility of growth, and responsibility. Herzberg's dissatisfiers (factors extrinsic to work) can be related to Maslow's lower level needs such as interpersonal relations on the job, salary, company policy, administration, and working conditions. Even when Herzberg's dissatisfiers, which address the safety and physiological needs are well managed, the nurse can remain unmotivated unless he/she has the opportunity to satisfy a higher level need (Herzberg).

Conclusions

The primary finding of this study is most participants manifested a desire to obtain and were motivated by higher level needs. It was found that intrinsic factors were more important than extrinsic factors in motivating a critical care nurse to pursue an education in graduate nurse anesthesia. The major finding reported in this sample was a career which may provide increased individual responsibility and autonomy may help to promote feelings of self-actualization. There were inconsistencies found with increased financial rewards when comparing the eight subscales to the twelve projected and self-reason rankings. The only demographic factors reported as making a difference were that females, overall, scored lower on the autonomy scale than did males, and subjects who had two or more children tended to give the lowest ratings on all scales except increased level of competence. Although studies were not found that specifically addressed the motivational factors of the nurse anesthetist, studies were

found that addressed work satisfaction and motivation of the registered nurse. The findings of this study support these previous studies in the literature as well as the theories of Abraham Maslow and Frederick Herzberg.

Although increased financial gains may be a benefit to the CRNA, it is not the main motivator. According to Maslow (1970) and Herzberg (1966), money is more of a basic (hygiene) need than a motivator. Hygiene needs, when satisfied, may tend to eliminate dissatisfaction but do little to motivate an individual to superior performance or increased capacity. Satisfaction of the motivators, however, may permit an individual to grow and develop in a mature way, often implementing an increase in ability.

Increased financial gain may be the main motivator for some, but employment with more individual responsibility and autonomy was the most important projected and self-reason for pursuing graduate education in nursing anesthesia. In exploring the differences between extrinsic and intrinsic factors, it was found that self-actualization ranked significantly higher than that of the other scales (mean= 4.61, SD= .37).

Autonomy, which ranked second (mean= 3.96, SD= .59), is a characteristic of self-esteem and self-actualization. Overall, intrinsic factors were ranked higher than extrinsic factors. These results are consistent and support a number of other studies (Brown et al., 1987; Carpenter, 1989; Harrison, 1987). The highest ranking extrinsic factor was security (mean= 3.95, SD= .52), followed by belonging (mean= 3.87, SD= .62).

Recommendations

Research

1. Greater sample size involving other regions of the United States to determine if the results of this survey correlate with nation wide statistics.

2. Revision of the questionnaire. Some inconsistency was noted concerning finance. In the projected and self-reason rankings, greater financial reward was rated second overall, but it must be noted that greater financial reward was included in the same statement with increased job security, which may have altered the results. In the eight subscales, finance, which is an external factor, was rated seventh overall. Either finance rates lower than was originally noted as in projected and self-reason rankings or it does actually rate higher, but the questionnaire did not assess this area satisfactorily in the eight subscales.

3. Administering the questionnaire closer to the beginning of the first year in nurse anesthesia education would be important in order to increase the level of accuracy in recalling and documenting applicable factors.

4. In this study, females scored lower on the autonomy scale than did males. The reasons underlying these findings are not clear, but since most CRNAs are female, future work should seek to delineate the factors that account for these gender differences and their implication for the future of the profession.

5. By focusing further research upon the identification and measurement of the factors of autonomy, increased responsibility and self-actualization, it may be possible to delineate parts of the nursing anesthesia programs which stimulate personality

growth. Then the individual nurse anesthetist, and thus the profession of nursing anesthesia, might reach new levels of excellence.

6. Future research studies may benefit in the development of an instrument which involved open-ended questions to further assess individual motivational factors not specifically included.

7. It would be of interest to conduct a research study assessing how other health care personnel (i.e. anesthesiologists, administration, nurses, etc.) feel about meeting the higher level needs of CRNAs.

8. Using Cronbach's alpha to estimate informal consistency of the research questionnaire for intrinsic and extrinsic subscales, it was found certain revisions may be advised. Future research studies using this questionnaire as a guide may benefit by assessing all items and revising, in particular, those items in the following subscales: security alpha 0.26; competence alpha 0.34; and belonging alpha 0.38. This may allow greater internal consistency of the instrument and increased reliability in research findings.

Practice

1. Now that motivators have been identified, it would be helpful to orient anesthesiologists, clinical coordinators, and others in supervisory positions to those factors that need to be stressed in order to insure individual satisfaction. Awareness of these factors may also help to alleviate the present nation wide shortage of certified registered nurse anesthetists.

2. If employers find it difficult to recruit and retain certified registered nurse anesthetists (CRNAs), perhaps (based on this study) they need to further assess the level of autonomy, individual responsibility, financial rewards, as well as other higher level needs that are or are not being supplied to the nurse anesthetist.

Education

1. Educational programs for graduate level nursing anesthesia may find ways to further promote the development of higher level needs by allowing conditions of increased training independence in the clinical setting. This may also help promote greater feelings of self-confidence and competence.

2. Although higher level needs, which include increased autonomy and responsibility, rank high in importance of needs of the future CRNA, each individual should be assessed to distinguish the level of clinical independence needed, which will best develop belief in their own abilities.

APPENDICES

PROGRAM DIRECTOR CONSENT FORM

Dear Graduate Nursing Anesthesia Program Director:

Your first year class of anesthesia students is invited to participate in a study of motivational factors which enhance registered nurses entry into nursing anesthesia programs. The study will focus on first your nurse anesthesia students in north central states.

Perceptions are sought regarding intrinsic and extrinsic motivational factors. The survey tool used is a questionnaire which will take approximately 10 to 20 minutes to complete.

I am asking your permission to come to your school and to have 20 minutes of class time with first year nursing anesthesia students in order to have the questionnaire complete. I will follow up with a phone call in the next week to seek your permission and to obtain the number of first year students.

Although study benefits may not affect you directly, the proposed benefit of this study is providing an increased awareness of why registered nurses enter anesthesia. This may provide information helpful in alleviating the shortage of certified registered nurse anesthetists.

Any information obtained in connection with this study will remain confidential and anonymity is assured to all participants. No individual or institution will be identified in this study. This study is about motivational factors and is not an evaluation of specific individuals or institutions.

It is hoped that permission will be granted to visit your learning facility in order to personally deliver the questionnaire to the students to help insure as high a return rate as possible. Completion of the questionnaire will be taken as evidence of willingness to participate and consent to have the information used for the purpose of the study. An abstract of study findings will be sent to each program that participates.

I look forward to further communication with you and your facility in the near future. In the mean time, should you wish further explanation, please feel free to contact me. I am presently a second year nurse anesthesia student at the University of North Dakota and this study is for my masters thesis.

Thank you.

Sincerely,

Terry L. Stock, SRNA

APPENDIX B

CONSENT FORM

Invitation to Participate in a Study on

Motivational Factors

You are invited to participate in a study of motivational factors which enhance registered nurses entry into a nurse anesthesia educational program. You were selected as a possible participant in this study because you are a first year nurse anesthesia student in a north central state.

Your perceptions are sought regarding intrinsic and extrinsic motivational factors. You are requested to complete the questionnaire which will take approximately 10-20 minutes.

Although study benefits may not affect you directly, the proposed benefit of this study is providing an increased awareness of why registered nurses enter anesthesia, which may provide information helpful in alleviating the shortage of CRNAs.

Any information obtained in connection with this study will remain confidential and anonymity is assured to all participants. No individual or institution will be identified in this study. This study is about motivational factors and is not an evaluation of specific individuals or institutions.

Completion of the questionnaire will be taken as evidence of your willingness to participate and your consent to have the information used for the purpose of the study.

An abstract of study findings will be sent to the program director of each learning institution that participates in the study.

Should you wish further explanation, please feel free to contact me.

Sincerely

Terry L. Stock, SRNA

APPENDIX C

MOTIVATIONAL FACTORS OF FIRST YEAR ANESTHESIA NURSING STUDENTS QUESTIONNAIRE

Registered nurses working in critical care units may continue their formal education for a variety of professional as well as personal reasons. A study of the reasons (factors) is assumed to be relevant in evaluating professionalism among the nursing anesthesia population.

Directions for Section I

In the small box in the alphabetized columns on the answer sheet, please answer the following questions as they pertain to you. When answering, please fill the blank or blacken the corresponding space on the answer sheet with the No. 2 pencil provided.

- A. Age in years _____
- B. Marital status
 - (1) Single
 - (2) Married
 - (3) Widowed
 - (4) Divorced
 - (5) Separated
- C. Sex
 - (1) Female (2) Male
- D. Are you supplying the primary financial support for you or your family?
 - (1) Yes (2) No
- E. Number of children in family at time of entrance into the nursing anesthesia program? _____
- F. How many years have you worked as a nurse in a critical care unit prior to entering a nurse anesthesia program? _____ years.
- G. Total number of years you have worked in the nursing profession?
_____ years.

According to the literature, there have been a number of studies done concerning job satisfaction and factors which motivate people to remain at their jobs or to seek a new career field.

This study will use a five point rating scale in which to survey motivational factors of first year nursing anesthesia students. Please answer the 32 items listed below as to the degree to which the items least describes ("1") to best describes me ("5").

Scale	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
	(least describes me)			(best describes me)	

1. _____ Entered the nurse anesthesia program because of a need for independent thought and action.
2. _____ The presence of financial gains was not a primary motivational factor for me.
3. _____ Feel a sense of fulfillment with the challenge of high risk patient care.
4. _____ Was not motivated by the extent to which people inside the health care field view nurse anesthesia as a highly respected career field.
5. _____ I like a job that is consistent enough for me to become an expert at it.
6. _____ Motivated by the extent to which people outside the health care field view nurse anesthesia as a highly respected job.
7. _____ Don't desire the opportunity to have greater autonomy in planning what course of action to take and responsibility for it.
8. _____ Looked positively towards the financial rewards nursing anesthesia will bring.
9. _____ Satisfied with a nursing position with no signs of obtaining future upward mobility.
10. _____ After talking with CRNA's working in the field, decided this was the career path I wanted to take.

- | Scale | 1 | 2 | 3 | 4 | 5 |
|-----------|--|---|---|---------------------|---|
| | (least describes me) | | | (best describes me) | |
| 11. _____ | Try to avoid close one-to-one patient contact because it makes me uncomfortable. | | | | |
| 12. _____ | Motivated by the financial gains. | | | | |
| 13. _____ | The critical care nursing field did not allow me to try new techniques. | | | | |
| 14. _____ | Was not attracted to nursing anesthesia by being aware of the critical shortage in this career field. | | | | |
| 15. _____ | Have a need to be dependent on others for guidance in deciding what actions to take in a clinical situation. | | | | |
| 16. _____ | Attracted to anesthesia because of the employment flexibility it offers. | | | | |
| 17. _____ | Have a tendency to avoid the opportunity in seeking new experiences. | | | | |
| 18. _____ | What others thought (family and friends) when I entered anesthesia in nursing did not matter to me. | | | | |
| 19. _____ | Have a strong need for personal growth and development that a nurse anesthesia position might provide. | | | | |
| 20. _____ | Liked the opportunity of having other health care workers look to me for knowledge. | | | | |
| 21. _____ | My employment as a nurse in critical care was satisfying because of a greater number of routine protocols. | | | | |
| 22. _____ | Monetary incentives did not influence my decision to enter the nurse anesthesia program. | | | | |
| 23. _____ | Had a strong desire to obtain self-fulfillment, that is, being able to use one's own unique capabilities, realizing one's potential. | | | | |
| 24. _____ | Discouraged to enter anesthesia mainly by family or personal friends. | | | | |

Scale	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
	(least describes me)			(best describes me)	

25. _____ Have no desire to fully use my nursing skills and abilities to their fullest potential.
26. _____ Desire the career stability nursing anesthesia offers.
27. _____ Approach positively situations that are uncertain and at times highly unpredictable.
28. _____ Was not motivated by the social position that nurse anesthesia holds in the community.
29. _____ My employment in critical care nursing was unrewarding because it did not allow me the autonomy I desire.
30. _____ Was not attracted to anesthesia because of job security it offers.
31. _____ Approach positively becoming involved in a stressful critical patient care situation.
32. _____ Encouraged to enter anesthesia from co-workers in the health care field.

For what reasons do you think critical care nurses pursue further education in nursing anesthesia? This is not necessarily the factors why you personally entered an anesthesia program, but the projected reason in a professional generalized sense. Rank the reasons listed below from one to twelve, where 1 represents the reason you think most important and 12 is the least important.

Item	Projected Reason Rank
Employment with more individual responsibility and autonomy	_____
Critical care nursing did not offer a sufficient career ladder for further advancement	_____
To obtain a Master's Degree	_____
To advance within the nursing profession through specialization	_____
To obtain increased job security with greater financial rewards	_____
To increase knowledge by having the opportunity to more closely associate pharmacology with physiology of disease processes	_____
To obtain more prestige within the health care field as well as society in general	_____
Employment with more convenient hours	_____
Offers intellectual challenge with more one-to-one patient contact	_____
Entered nursing as an educational base (i.e. stepping stone) with the goal of nursing anesthesia	_____
The choice to do this just seemed to evolve on its own (i.e. fate)	_____
Anesthesia offers areas of specialization such as OB/GYN, orthopedics, pediatrics, etc. which one can enter, as well as a general variety of patients	_____

Now answer the same questions from your own point of view why you were personally motivated to pursue anesthesia in nursing. Rank the reasons listed below from one to twelve, where 1 represents the reason you think most important and 12 is the least important.

Item	Projected Reason Rank
Employment with more individual responsibility and autonomy	_____
Critical care nursing did not offer a sufficient career ladder for further advancement	_____
To obtain a Master's Degree	_____
To advance within the nursing profession through specialization	_____
To obtain increased job security with greater financial rewards	_____
To increase knowledge by having the opportunity to more closely associate pharmacology with physiology of disease processes	_____
To obtain more prestige within the health care field as well as society in general	_____
Employment with more convenient hours	_____
Offers intellectual challenge with more one-to-one patient contact	_____
Entered nursing as an educational base (i.e. stepping stone) with the goal of nursing anesthesia	_____
The choice to do this just seemed to evolve on its own (i.e. fate)	_____
Anesthesia offers areas of specialization such as OB/GYN, orthopedics, pediatrics, etc. which one can enter, as well as a general variety of patients	_____

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